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e-Justice: A Bottom-Up Venue to Promote Open Justice? A Heuristic Analysis Based on Agent-Based Modelling

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Abstract

Over the past decade, all around the world, it has been widely witnessed the courts attempt to switch from paper to electronic filing, expecting to improve efficiency and gain the means for transparency and for bringing adjudication practices under public eyes. This is what we call the e-justice transformation. The evaluation of its efficacies is an area of interest for the law and justice administration research communities, and, of course, for practising lawyers too. Considering recent developments in the Chinese e-justice transformation, the author is also concerned about projecting and evaluating their effects on open justice issues. I will use agent-based modeling as a tool for this. In order to avoid turning the parameter space into something unwieldy huge, I resorted to a number of well-founded assumptions and scenarios. I harvested them from tenets in diverse-disciplinary literatures. In doing so I attempted to manage the balance between the Scylla of oversimplification and the Charybdis of too much detail remains a real conundrum. The results can be considered worth-while for the offer they provide to the current debate: (i) the tenets of four different disciplines can use this paper as an introduction to the design of behavioral models of communities with deliberate agents, (ii) the topic of investigation is key for current debate, as all legal systems have to face the threats that datafication, social media and the dynamics of irreconcilable cult-carrying convictions breed – even the abuse of open justice functionalities. Finally, the paper suggests that (iii) no single discipline, single jurisdiction, single market or single culture will be able to adequately face such threats on its own.

Keywords: Open justice, e-justice, datafication, agent-based modeling, constitutional interpretation, cultural theory, information theory, cultural diversity.

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1. Introduction and Background

When considering open justice, Jeremy Bentham is a significant source. He articulated open practice of courts as central to a wide range of goals, such as democracy, elections, promoting justice and so on.[1] Bentham, championed the open justice principle as an important check on the performance of judges.[2] He also reasoned that judges would only act in a fair, unbiased and just manner if their actions were subject to public review and criticism. For Bentham, it was therefore 'publicity', or open justice, that raised the quality of justice dispensed by judges and in turn made the judiciary worthy of its standing as a democratic institution. Bentham's open justice philosophy is summarized, as "Publicity is the very soul of justice. It is the keenest spur to exertion and the surest of all guards against improbity. It keeps the judge himself while trying, under trial."[3]

An e-court is a suite of services that entails minimum use of paper from the moment a case is filed until its disposal. While still seldom happening in practice, at least in theory, with a smoothly working e-justice, information integrity and user authenticity can be more secure, information can be captured and passed on digitally, data exchange is not fragmented, case histories are complete and ready on demand, case management is frictionless, correspondence is exchanged electronically, fee payments are dealt with through dedicated websites and forms that simplify, and streamlined court proceedings are available to court users online 7/24. If we judge the tendency based on Bentham's standard, successfully implemented e-court could help to achieve e-justice with its target of open justice, since judges' manner and performance can be put under public review and criticism. [4]

But depending on who is speaking, the precise meaning of the open justice concept has not been fixed. The open justice principle has a venerable rationale behind it, and is deeply rooted in western democratic and constitutional consciousness.[5]

Most frequently, researchers identify functions when considering open justice. Based on our limited research, at least the following three functions can be labeled as generic core values for open justice: (1) realizing the public's right to know,[6] (2) supporting accountability of the judiciary[7] and (3) providing

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[1] Bentham, J. (1843). The Works of Jeremy Bentham, published under the Superintendence of his Executor, John Bowring (Edinburgh: William Tait, 1838-1843). 11 vols. Vol. 4. p. 305 Retrieved 2017/10/29 from http://oll.libertyfund.org/titles/1925

[2] *Ibid.*

[3] See for instance http://www.court.gov.cn/wenshu.html

[4] Indeed, in this short paper, the topic of ICT in justice is introduced in a very positivist way. Nevertheless, I am aware of the truth that e-Justice is often a complex endeavor which results in systems that are far from perfect, when successful at all (e.g. Schmidt, A. H., & Zhang, K. (2019). *Agent-Based Modelling: A New Tool for Legal Requirements Engineering: Introduction and Use Case (KEI)*. European Quarterly of Political Attitudes and Mentalities, 8(1), 1-21. Contini, F. and Cordella, A. 2016. *Law and Technology in Civil Judicial Procedures*. In Brownsword et a. The Oxford Handbook of the Law and Regulation of Technology. Velicogna, M. (2007). *Justice systems and ICT-What can be learned from Europe*. Utrecht L. Rev., 3, 129.). I definitely agree that such complexity/difficulty of development implementation exists and has been studied.

[5] As Schauer described, the mark of the Common Law system cannot be removed from the principle. It is linked to the norm and the ideal of the common law traditions. See Schauer, F. (1995). Giving Reasons, Stanford Law Review, Vol.47(4), pp. 633-659, p. 633. Also as Patrick Keyzer claimed "There is a common law right to justice, and there is a common law principle that the pursuit of justice is ordinarily done in open court."see Keyzer, P.(2002) Media Access to Transcripts and Pleadings and 'Open Justice': A Case Study, The Drawing Board: An Australian Review of Public Affairs. Vol.2(3), pp.209-219, p 210.

[6] In 1936, the majority in Ambard v. Attorney General for Trinidad and Tobago made the following statement in a decision involving freedom of the press: "Justice is not a cloistered value: she must be allowed to suffer the scrutiny and respectful, even though outspoken, comments of ordinary men."(Ambard v Attorney General for Trinidad & Tobago [1936] AC 322 at 335.) In today's words, open justice is the requirements of a wide-ranging panoply of democracy of which could be identified the public's right to know as its first core value. It includes access for and to the press, because only through accounts in the press can many members of the public learn about the operation of the courts, their rights and other legal issues.

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conditions for a jurisdiction's immune system's efficacy[8] – and as such is a *sine qua non* for exercising judicial power.

The impacts of e-justice on open justice have been conspicuous in practice. In different jurisdictions, working towards (at least partial) transparency via (either successful or unsuccessful) e-justice projects has created millions of windows that provide access to the courts' operations at virtually no cost to the government. A common goal is that policymakers, the judiciary, litigants, and the public are able to identify and understand the standard patterns of judicial decision-making in their jurisdiction: who tends to win/lose what, and how often, and why. And e-justice services also support providing the feedback needed to fine-tune policies, and showing the public to see what courts tend to do in situations like their own. They moreover can provide the means to the public to show their policymakers how they feel about it.

So, transparency through open justice as a potential feed-back mechanism for civilians on the quality of the judicial system has sufficiently wide-spread support in technology and technology distribution to warrant a serious form of open justice. High expectations have been raised, also when working from the assumption that legal-system performance is useful to the economy. Will these expectations come true in real life?

In fact, open justice systems are empty vessels whose contexts depend on legal culture and historic conditions which will diverge considerably in practice (and locally) and can even give rise to disagreements and, indeed, conflicts.[9]

Against this background, what qualifies as consistent application of transparency under ever-changing circumstances? How do we define the performance of courts and how far do we go in its assessment? What legal arrangements can guarantee a meaningful and effective open court system? Raising such questions illustrates what our contribution will be about.

How can we study all this more deeply? The paper attempts to do this through the construction of a computer-based model of open justice 's key mechanism in e-justice. What I have outlined does not negate the standard legal research methodology, but it does give an additional instrument that puts the emphasis squarely on how mechanisms that implement theories will work out under clear assumptions. Indeed, the model presented is based on existing instruments, such as agent-based modeling and a selection from disciplinary tenets that are appropriate for such modeling of what e-justice and open justice may bring

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[7] The second core value asserts that open justice promotes judicial accountability,. Indeed, publicity is a deterrent against malversation and misconduct by judges . It is believed that open justice achieving through open court, publishing reasons, according procedural fairness could avoid perceived bias and to ensure fairness of a trial, is the way the judiciary is held accountable to the public. Indeed, there is no lack of precedents that unfairness, partiality and other abuses remained undetected when justice were permitted to operate behind closed doors. (Russell v Russell [1976] HCA 23; (1976) 134 CLR 495, 520).In most societies current days, judges are afforded with discretion and independence. The power of discretion and independence comes with tremendous responsibilities, and the requirement of openness will put a judge's discretion under observation and make sure that fairness in the legal sense is respected. Of course, this also implies the mechanisms required for government-directed justice in cultures where such is not against the law.

[8] The third core-value we adopt is the therapeutic value to justice. As people wish, a smoothly working court system is formed when all relevant aspects of the decision-making process by judges are revealed to policymakers, to litigants, and to the public in forms that they can readily comprehend. Such a system does not rely on formal law and does not circumscribe the procedures that employ to address disputes. Instead, public confidence over the performance of the judiciary, whether judges promote or demonstrate "an absence of arbitrariness" is closely connected with the ability and the scope of the judicial practices they can observe and understand. The therapeutic value of open justice works towards self-enforcing regulations in a common-sense manner, and has a function not unlike that of an immune system.

[9] The social-economic-technology based complexities of the communities that open-justice services must address make the concept of open justice get different faces, while serving similar purposes, like different languages do. The requirements for e-justice transparency (or open justice) are inherently local in the sense Clifford Geertz exposed justice to be inherently local.

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about. Agent-based models are sensitive to changes, in the environment and to the different forces that are working the domains of the different judiciaries that we choose to model. It helps identifying what results may show socially and how they come about when technology changes.

My approach draws inspiration from seminal works by Douglas,[10] Akerlof,[11] Bobbitt[12] and Shannon.[13] Douglas identifies and examines three mutually exclusive cultural organization structures (hierarchies, markets, collectives) and pinpoints the mechanisms of their dynamics through normative debates. Akerlof suggests at least seven adaptations to the classic economic assumptions of rational human nature and stable economic equilibrium; I adopt a few of them. Bobbitt comprehensively reads and analyses USA constitutional case-law argumentation and identifies six interpretation contexts: history, text, dogma, prudence, structure and ethos; we consider this for constraining our modelling of legal argument. Shannon recognizes (i) the cultural embeddedness of coding-mechanism efficiency and (ii) the robustness delivered by coding redundancy.

I use these authors' findings as heuristics for modelling, thus constraining the endless number of choices that must be made in a well-founded manner. Through harvesting their ideas, adapting them to our needs and proceeding to model, I seek to understand the mechanism of open justice that emerges from studying individual agents' choices in individual situations generated in a stochastic manner in these artificial worlds.

The resulting overall view is one of creative formation. This is very much a complexity effort that could not be cut short.

1.1 The Roles of Cultural Influences for Understanding Open Justice

It is a widespread and frequently repeated truism that the world in general, including the developing world, needs "transparency" of justice. What is necessary for the appreciation of transparency in judicial systems is an explicit "local" conception of jurisdiction performance – of what a desirable judicial system is. In this perspective, open justice is sensitive to cultural differences as some researchers showed that the effect on transparency, as one of the most robust of the court-justice effects, of disputants' level of process control[14] and the perception of legitimacy of the court procedures do be influenced by concerns that relate to the cultural values of the local jurisdictions. So, what are the underlying mechanisms? Here, I summarize and reformulate the mechanisms of cultural theory as offered by Mary Douglas in her book. Her discussions of what she coins normative debates (where what we coin cult-carrying stories are at stake) are fundamental for the model we explore. She identifies[15] three mutually incompatible community structures: hierarchies which focus on rules (formal rules) that aim concurrently for public safety and freedom from government intervention (in line with the idea of the social contract) and which are populated

[10] Douglas, M. (1992). Risk and Blame – Essays in Cultural Theory, London: Routledge.
[11] Akerlof, GA. (1984). *An Economic Theorist's Book of Tales: Essays that Entertain the Consequences of New Assumptions in Economic Theory*, Cambridge/London/New York: Cambridge University Press.
[12] Bobbitt, P. (1982). *Constitutional Fate: Theory of Constitution*. New York: Oxford University Press.
[13] Shannon, CE. (1948). A Mathematical Theory of Communication, The Bell System Technical Journal, Vol. 27 (3), pp.379-423. doi:10.1002/j.1538-7305. 1948.tb01338.
[14] Leung, K., Lind, EA., (1986). Procedural Justice and Culture: Effects of Culture, Gender, and Investigator Status on Procedural Preferences. Journal of Personality and Social Psychology Vol 50(6), 1134-1140. pp. doi: 10.1037/0022-3514.50.6.1134
[15]We adopt the functional analysis of communities in three incompatible organizational forms: hierarchies, markets and collectives as presented in *Risk and Blame.* In Douglas' story, the theory lends itself to a great variety of applications, from debates on women priests (chapter 15) to the debates on the sustainability of the biosphere (chapter 14), on the position of labor unions in Sweden and the United Kingdom as well as on lepers in Sweden (Chapter 5).

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by *civilians*; markets which focus on minimizing both rules and norms, promoting entrepreneurship and trusting the invisible hand of the price mechanism and which are populated by *individualists*; and cults that have members and that focus their organization around norms (or informal rules) for equality and which are populated by *collectivists*. Douglas illustrates the regularities she observes by examples.[16] Based on the illustrations and these regularities, I designed and simulated a mechanism that can be summarized as emerging from a complex of overlaying networks (representing the different communities an individual can be concurrently a member of) that have dynamics that are caused by individuals, which may result in critical transitions that are large and unexpected.[17] The networks are between or within differently organized communities: the hierarchies, the markets and the collectives or cults that are under the influence of the jurisdictions. Douglas' basic idea of a normative debate is the (permanent) debate within a community on the form of its organizational structure: such debates consist of interactions that affect individual members' private goals and that concurrently generate common feelings.

1.2 The Balance between Open Justice and Other Values

The three core values of open justice discussed earlier live at the cost of (or in perpetual tension with) other legal values, such as privacy and trade secrets.[18] For example, judges in the Scott case described the feelings of concession, which may be "painful, humiliating or deterrent both to parties and witnesses", would risk devaluing the principle of liberty upon which open justice was originally founded. Therefore, in cases where the harm from court-file revelation might outweigh the benefits, the law and its performance must allow to strike a balance. This is to be deliberated in a case-by-case manner. When commercial secrecy issue is raised, there are clear limitations to the practice of open justice too. Exposing sensitive commercial documents can undermine a business strategy and create a 'bad press' for the company at risk. International commercial arbitration proceedings have proved increasingly popular due to the confidential nature of the tribunals' proceedings and final awards. The delicate balance between commercial secrecy and open justice has been recognized in regulatory practice too, for example in 2016 a new 'Trade Secrets Directive' was introduced in Europe, seeking to harmonize the law across the EU, in addition to safeguarding the confidentiality of documents in trade secrets disputes.

Traditionally the choices and behaviours of economic actors are assumed to be based on their rationality and full knowledge of the market, and are also assumed to work towards market equilibrium through the price mechanism. It has been widely shown that such assumptions are often untrue. Amongst many, Akerlof has addressed this issue and suggested additional assumptions to be integrated in the economists' models. I take Akerlof's critique on the traditional assumptions seriously, but use his insights in the modelling of the influences of collectives on individual decision-making. After all, straightforward cost benefit computing is often possible. And such thinking on a law system's efficacy is useful. It influence economic activities and therefore have economic impact, e.g. on the propensity to invest. Summarizing

[16] Miller, JH., & Page, SE. (2007). *Complex Adaptive Systems: An introduction to computational models of social life*. New Jersey: Princeton University Press. The two authors describe an agent-based model for this mechanism, linking it to the collective result of an audience deciding to give a standing ovation or not. We have added it as option to our framework.

[17] *Ibid.*

[18] Of course, the legal values in tension with OJP are not limited to privacy and trade secrets. For example, when we discussed the benefits of open justice, we mentioned that publicity is a deterrent against malversation and misconduct by judges. However, reversely, as Justice Sandra asserted, a variety of external pressures and threats may make it difficult for judges to decide cases impartially when the courts operated in the "sunshine". But time and space are limited, so we focus on the issue of secrecy only.

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research, the level of procedural formality,[19] the methods of work within judicial offices and the incentives for the parties engaged in service provision, especially judges and lawyers are economically important.[20]

1.3 Doing Business

These studies have had impact on the World Bank's *Doing Business* project. Among its indicators, the "Enforcing Contract" variable mainly focuses on court practices, which are essential for entrepreneurs because they interpret the rules of the market and protect economic rights. It provides rankings of economies on the ease of enforcing contracts which are determined by their *distance to frontier* or DTF scores.[21] These are rather complex.[22] Therefore, I use data provided by the World Bank when modelling based on economic theory, even though these data may be contestable – they are all that we have available. Anyway, quantitative and statistical analyses generally converge to the result that the qualities of equity and the functions of the judicial system are significant to economic productivity in a jurisdiction, since the behaviours and the choices of economic actors are influenced by the efficacy of the judicial system.

This is not a one-way street, though. When open justice is realized in traditional nation-state jurisdictions, it most likely becomes dependent on privately owned infrastructural services that have not only (shown the tendency to) become natural monopolists on a global scale, but also (shown the tendency to) acquire collections of big data that allow them to manipulate what of open justice's content will be shown and to whom and how (consider e.g., analogously, the Bell-Pottinger story from South Africa).[23] These are real risks that will have to be faced.

Moreover, while working on the model, the political meaning of information technology has evolved dramatically. It not only raises the practical problems of how to implement efficient and robust coding for open justice contents. It also raises the issue of how to do so in a hostile environment. Qua communication theory, we enter the domain of Shannon's information theory. The following three things have been picked up from his communication-of-information theory: 1) Efficient coding of information uses a language's stochastic of code sequences; 2) Increasing the efficiency of code increases a message's sensitivity to become distorted by random noise; 3) So, code redundancy is necessary for communication security – here, a balance needs to be struck.

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[19] Djankov, S., La Porta, R., Lopez-De-Silanes, F., & Shleifer, A., (2003). Courts. The Quarterly Journal of Economics, Volume 118, Issue 2, 1 May 2003, pp. 453-517.doi.org/10.1162/003355303321675437

[20] Buscaglia, E., & Dakolias, M. (1999). Comparative International Study of Court Performance Indicators, New York: NY The World Bank Legal Department.

[21] These variables are named *distance to frontier* (DTF). Their values must be read as in a percentage-point scale, where 100% marks the standard (which is the highest level found in the world). These DTF variables are composites. We have one for overall judicial performance, which we estimated for Panda and Tulip and put in the right-hand plot. Only seven years are available in the World-band databases. The DTF variables provided by the World bank deliver an expression of estimated judicial performance per jurisdiction. It is a model for such performance, provided in a two-step mechanism. First, several variables on judicial transactions costs concerning doing-business activities (like: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders and enforcing contracts) are defined as relevant and are measured periodically for over a hundred jurisdictions. Second, the best of these scores is used as a 100% standard for computing standardized performance values.

[22] The project launched in 2002 to measure business regulations and their enforcement across 190 economies. The first Doing Business report, published in 2003, covered 5 indicator sets and 133 economies. The 2017 report covers 11 indicator sets and 190 economies.

[23] See for a live example of what this uncertainty leads to: https://citizen.co.za/news/south-africa/1476840/read-alleged-report-bell-pottingers-gupta-pr-plan/ (consulted on September 24).

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This is important, because Shannon's separation between code and content bites back when used in practice. When the efficiency of the code (the communication language) depends on sequential-use probabilities, code meanings are sensitive to the probabilities of how they are used in their cultures, thus they are culture dependent (which is frequently ignored and rather different from the pure forms of content independence that are often suggested). Such efficient culture-dependent coding for the legal domain is precisely what legal theory has been after in its quest for identifying interpretation methods (concurrently creating a specialist 'dialect'). This is where Bobbitt meets Shannon. I consider the heuristics implied of tremendous importance when tackling the problems of misleading or abusing communication that aims to degrade open-justice services' core functions.

2. The Imaginary Jurisdiction Approach

I adopt the agent-based modelling approach[24] and discuss some consequences of virtual attempts towards judicial transparency in two different cultural settings. I introduce two imaginary toy jurisdictions (Panda and Tulip). Such leads to a case study in artificial life. I believe a question may arise immediately: Why imaginary jurisdiction? In computer science term, artificial jurisdiction. In fact, jurisdiction is a summary term for the totality of legal institutions. These institutional actions and resulting reactions have a variety of effects of diverse magnitudes, numerous and complicated. Without a longer-term collection of empirical data is not feasible when modelling the real world - and that's all we can get. In contrast, performing experiments with artificial jurisdictions, i.e. by performing computer simulations with jurisdictions where agents' behaviors exactly follow the mathematical descriptions that we imposed via the program, can solve the problem of data unavailability and turn the focus on how mechanisms that implement theories will work out under clear assumptions. Therefore, our results may be not directly applicable in any way to the jurisdictions that have inspired us (our own). With this caveat in mind I employ a few observed survey data to prevent our artificial world's models to stray too far away from the feasible.

2.1 Panda Jurisdiction (PJ below)

Imagine that the PJ is one of the fastest growing and quickest developing economies in our toy world. PJ is set up as a collectivist society: people act in the interests of the group rather than their individual selves.[25] In Hofstede's reasoning they are expected to show a weak desire for litigation and when this hurdle is negotiated, a weak desire for open justice, which may also attenuate their attitudes to e-justice.[26] Especially, PJ persons will demand while all information about their cases will be kept secret since what can hurt reputation is not so much the immorality of behaviors *per se*, but it's becoming known to public.[27] These complex attitudes are highly linked to the forms of "shame culture", which Hofstede

[24] We did design the model in Netlogo. Making the model proved helpful for focusing our understanding of the issue. We did not use the model for simulation, because the parameter space is way too large in relation to the impossibility to gain observable for calibration.

[25] We use Hofstede's description about collectivism to describe the cultural features of PJ. In-group considerations affect hiring from and promotion of closer in-groups (such as family), these are getting preferential treatment. Relationships with colleagues are cooperative for in-groups, yet they are cold or even hostile with out-group colleagues. Personal relationships prevail over task and company.

[26] This analysis has been largely correct, but it is not complete. PJ persons demand all information to be made available (be transparent enough for supervision by society) since the rumors have circulated about unprofessional practices in judicial decision-making.

[27] Hofstede summarized it as: "whether shame is felt depends on if the infringement has become known by others. This becoming known is more of a source of shame than the infringement itself."

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summarized as the key feature of the collectivist society. PJ attempted to jump-start the e-justice process and completed its e-justice development. Its efficiency and quality of judgments have become more precious in the public eye. What PJ cares most is whether the e-justice system could keep the amazing performance of economy, or even to wax its economic efficacy.

2.2 Tulip Jurisdiction (TJ below)

In contrast with PJ, TJ below has individualist subjects: act more in the interests of their individual selves than in the interest of the group they belong in.[28] Individualists do not have a shame culture that resembles what collectivists feel. The model therefore assumes that all judgments were available online. During this digitization movement, regulatory attention has been paid to issues of privacy and secrecy. And uncertainties have entered civilian and professional minds when considering the growing risks to adequate levels of digital security under growing levels of dependencies.[29]

3. Modeling

The basic building blocks of this toy world are patches, persons and props.[30] Patches represent units of land that can belong in a jurisdiction. Jurisdictions are the top-level nodes in hierarchical networks of patches. Persons are agents that reside on patches, which patch they reside on determines the jurisdiction they have to comply with. Separate jurisdictions never share patches. Other than patches and props do jurisdictions behave, for instance by making, enforcing and/or adapting rules. (Rules, norms and cult-carrying stories are the props in our model).

I consider the issue of how new forms of e-justice and open justice (that will produce Big Data) can adequately feed the normative debates on the performance of open justice with authentic information in PJ and in TJ. For each of these two we track disciplinary oriented story lines: respectively considering the hierarchical government, the market, the judiciary and two collectivist communities one constitutional and one revolutionary. As in each story-line the focus is on exchanging authentic information, the tenets of communication theory mentioned earlier will be raised when opportune in all three.

3.1 Governments

According to Douglas, governments are hierarchically organized institutions that make, thrive and abide by rules. Since they are legitimated by their subjects, monitoring the feelings of their subjects is important to the government for top-down adaptations of rules and policies. Consequently, in the model I will populate PJ and TJ with individuals who have stochastically distributed values in their set of personal scores on how the government performs its functions. In the initial distributions individuals largely support their governments.

[28] In-group considerations do affect hiring from and promotion of closer in-groups (such as separate religious groups), but less than in collectivist societies – and less with times where religious commitments waned and trust in market mechanisms waxed. Since a few decennia giving in-group members preferential treatment can easily be frowned upon as nepotistic. Relationships with colleagues are cooperative (and concurrently competitive) all around. Task and company largely prevail over personal relationships.

[29] For instance the judiciary's dependencies from the internet and software providers to keep the judicial digital services protected against malicious attacks and other exploits of vulnerabilities, vulnerabilities that in themselves have become commodities for a complete updating industry.

[30] Our modeling framework is realized in Netlogo. Some of its traces may have remained.

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PJ--Its rules express constitutional values in which "the people" as a collective is honoured predominantly. As such, bottom-up communication channels are essential for feedback to the government and top-down channels are essential for publishing what is currently important for nursing the collective. Concurrently new risks emerge with social media and their potential to spread "fake news." Consequently, communications in the context of e-justice and open justice are subject to being monitored.

TJ--The bottom-up communication channels essential for feedback are organized in elections, punctuated over time and at different levels of the organization. The top-down channels that are essential for publishing what the rules are that parliament has accepted and for broadcasting how they are enforced are more real-time affairs in which the media are important. But with internet and smart mobile becoming ubiquitous, monitoring digital communication for identifying risks of criminal and terrorist attack became a mechanism that TJ's parliament increasingly supported.

3.2 Markets

In the model I will populate PJ and TJ markets with transactions that become more and more subjugated to consumer profiling by businesses and governments, both by commercial and by public organizations. The way such developments are adapted by consumer choice is made part of the transaction-generation mechanism. I have parameterized this aspect.

PJ--When seeking for a better way to stimulate economic development, a special form of capitalism was conceived and introduced. What results is a capitalist market, embedded within a collectivist world.

TJ--The economical neo-classical story is carrying TJ culture. Consumers tend to agree to pay for the use of search engines and social media with their personal privacy as currency.

3.3 Judiciaries

According to Douglas judiciaries are hierarchically organized conflict-resolution institutions. Their performance is dependent on how they serve fair and efficient solutions. In our model such evaluations are individual, and based on experiences with litigation and on how social media process court judgments.

PJ--Its attempt to jump-start the e-justice process is used to show the potential of our modelling framework. I have discussed PJ's "shame culture". Against the cultural background, it is assumed that PJ's Supreme Court sought to strengthen the transparency of courts on the one hand, but concurrently sought to avoid harming the court system's public trust on the other.

TJ--When ICT services became ubiquitous, economic and organizational possibilities opened the path towards light forms of regulation of the judiciary by government agencies and the introduction of e-forms and apps to be used in litigation.

3.4 Collectives

There can be many of such collectives. The way they work in our model is through adapting an individual's evaluation value that expresses the nearness of the individual to the story and that can change in a normative debate.

In the effort to keep the model's size and complexity small, I distinguish only two types of collectives. They have PJ- and TJ-constitutional cult-carrying stories. They support the constitutions that the respective governments take care of. So, the model presents a collectivist, collectivist-oriented collective (further COC) in PJ and an individualist, market-oriented (further MOC) collective in TJ.

3.5 Civilians

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PJ and TJ are populated with individuals who have stochastically distributed values in their particular sets of personal scores on how the government, the market, the judiciary, and the collectives perform. In the initial distributions, individuals largely support the constitutional collective that defines the government's culture-carrying story. Such a set of personal scores can be represented in a list coding someone's personal moral code, where

$pmc_i = [j,m,l,coc,moc]$

reads as the personal moral code (*pmc*) of an individual (i) as coded in a list with performance evaluations of the jurisdiction *(j),* the market (*m*), litigation practice *(l),* the collectivist-oriented culture (*coc*) and the market-oriented culture (*moc*). Each individual gets a stochastically distributed initial *pmc*.

3.6 Dynamics

Dynamics come into play when normative debates are conducted. Dynamics of complex adaptive systems have been characterized as "in between" or as "in critical transition." The idea is that a jurisdiction will either adapt in small steps in between tipping point situations or in revolutionary leaps when arriving at such a tipping-point situation. When considering normative debates on the organization of a jurisdiction, demonstrations in our toy world indicate (depending on participation volume) that the jurisdiction is closing in on a tipping point. Such a debate will always be on the jurisdiction's cult-carrying story and will concern issues of regulation (e.g., the constitution, judiciary policies), of inclusion (e.g., on welcoming fugitives), of segregation (e.g., on ethnic differences, Brexit), of economics (e.g., taxes, health care, public education), of national security (e.g., approaches to defend/enforce the tenets of the jurisdiction's constitution) etc. There are way too many possibilities here for modelling anything remotely approaching completeness, so I select two scenarios that consider the uses (and possible abuses) of e-justice and open justice. The scenarios are based on the frame as unveiled in Douglas, sketching a mechanics of segregation. In-group cohesion and segregation are enforced by framing[31] a collective as the cause for huge, but insidious risks to the community, while concurrently the creation of moral panics[32] that support many to join the dominant group and to further isolate the out-group. Both scenarios focus on the risks of possible abuses and on the legal mechanisms that can help domesticate them in our two toy jurisdictions.

4. Finding

The model research tallies with the view that open justice can reduce error, advance benign political goals, and help protect the judicial process from subversion by powerful interests. Consistent with the literature, the model-based arguments in this paper support that the transparency through open justice as a potential feedback mechanism for civilians on the quality of the judicial system has sufficiently widespread support in technology and technology distribution to warrant a serious form of smoothly working open justice to be possible. Specifically, various regulatory steps in the open justice context are singled out, such as publication of judgment on time and with limited omissions will help to secure a fair judicial process. Put differently, while e-justice may appear problematic on some occasions, such as when it can support public opinion to become disappointed rather instead of promoting the reliance of professional judges, things would be even more problematic without it.

[31] As put on the scientific map by Goffman, E. (1974).
[32] As put on the scientific map by Cohen, S. (1972).

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Second, the results also suggest a practical strategy of e-justice reform, at least with respect to the application of one jurisdiction's rules and experiences blindly in another. It is a widespread and frequently repeated truism that the world in general, and the developing world, needs "transparency" of justice. What is necessary for the appreciation of transparency in judicial systems is an explicit "local" conception of jurisdiction performance – of what a desirable judicial system is, as such calls now too often carry the flavour of what weird[33] jurisdictions see as beneficiary, without considering the troubles such jurisdictions are currently facing themselves.

This essay provides a foundation for agent-based models as viable research tools for understanding the dynamics of law-policy tenets in differently styled jurisdictions. I think this innovative way of analyzing can serve to identify what changes are brought, based on simulation and analysis, to institutional arrangements, to normative debates, to rational economic choice and to the forms of legal intervention available to courts – also in the face of contingent innovative changes in information technology. In doing so I found that managing the balance between the Scylla of oversimplification and the Charybdis of too much detail remains a real conundrum. I nevertheless consider the results worth-while for the input that offer to the current the debate: (i) to the tenets of four different disciplines, who can help can use this paper as an introduction to the design of behavioural models of communities with deliberate agents, (ii) the topic of investigation is key for current debate, as all legal systems have to face the threats that datafication, social media and the dynamics of irreconcilable cult-carrying convictions breed – also to the abuse of open justice. Finally, the paper investigation suggests (iii) that no single discipline, single jurisdiction, single market or single culture will be able to adequately face such a threat on its own.

Acknowledgment, supplementary material

This article is based on the results of the design and deployment of an agent-based model. The model has been realized in NetLogo by dr. Aernout Schmidt. Source code is available at his github site: https://github.com/dotlegal

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